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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/756,332	01/08/2001	Hajime Ishikawa	P / 2617-18	6730

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EXAMINER
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PEZZLO, JOHN

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/756,332

Applicant(s)

ISHIKAWA, HAJIME

Examiner

John Pezzlo

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24, 27 and 29-36 is/are rejected.
- 7) ☒ Claim(s) 25, 26, 28 are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3, 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1, 29, and 35 – Line 3, it is not clear whether "a subscriber service signal" is the same as line 1, "a subscriber service signal".
2. Claims 19 and 23 are objected to because of the following informalities: Line 2, "Ether" should be spelled – Ethernet --. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- I. Claims 6-12 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6-12 and 16 recites the limitation "said control signal" in line 3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

II. Claims 1 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Todd (US 6,714,516 B1).

1. Regarding claims 1 and 29 – Todd discloses (a) converting a subscriber service signal including x digital subscriber line (xDSL) signals, from an analog form to a digital form, refer to Figure 2 and column 6 lines 49 to 67.

Todd discloses (b) storing a plurality of thus converted sampling digital signals and control signals into a first multiple signal, and multiplexing in time-sharing a plurality of the thus produced first multiple signals to thereby produce a second multiple signal, (xDSL to SONET), refer to Figure 2 and column 6 lines 49 to 67.

Todd discloses (c) transmitting said second multiple signal, SONET on the network ring (callout 204 in Figure 2), refer to Figure 2 and column 6 lines 49 to 67.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

III. Claims 2-5, 13-15, 17-24, 27, and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd (same as above).

1. Regarding claim 2 and 30 – Todd discloses a SONET signal (second multiple signal)  
Todd does not expressly disclose encoding said second multiple signal, said step (d) being to be carried out between said steps (b) and (c).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode the SONET signals in order to make the system more robust and less susceptible to errors. The benefit being less errors and a higher quality of service.

2. Regarding claim 3 – Todd discloses a SONET signal (second multiple signal)  
Todd does not expressly disclose said first multiple signal is encoded in said step (b) before being multiplexed in time-sharing.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode the SONET signals in order to make the system more robust and less susceptible to errors. The benefit being less errors and a higher quality of service.

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3. Regarding claim 4 – Todd discloses a SONET signal (second multiple signal), which has a frame structure including frames arranged in a certain cycle.

Todd does not expressly disclose a sampling digital signal of each of subscribers is assigned a time slot at a predetermined position in said frame, and is always stored in the assigned time slot.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to place each subscriber sampled signal into the same time slot in each frame which would make it easier to place and remove sampled signals during the signal processing. The benefit being less processing is required resulting in less errors occurring.

4. Regarding claim 5 – Todd discloses an ATM frame structure, which is comprised of a packet comprised of a header and a payload.

Todd does not expressly disclose a sampling digital signal of each of subscribers is stored into said pay-load in a predetermined order.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to place each subscriber sampled signal into the same time slot in each packet payload which would make it easier to place and remove sampled signals during the signal processing. The benefit being less processing is required resulting in less errors occurring.

5. Regarding claims 13 and 21 and 32 – Todd discloses said first multiple signal has the same transmission rate as a transmission rate of STM-1 or STM-4 in synchronous digital hierarchy (SDH), since Todd discloses a SONET system and SONET meets the SDH

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specifications which support STM-1 or STM-4 data rates the same as OC-3 and OC-12, refer to Figure 2 and column 6 lines 32 to 55.

6. Regarding claims 14 and 22 – Todd discloses a SONET system wherein the SONET frame cycle is 125 microseconds. Todd inherently discloses said first multiple signal uses a frame having a cycle of 125 microseconds.

7. Regarding claims 15 and 23 and 31 – Todd discloses a SONET system wherein the SONET frame includes framing bytes A1 and A2. Todd inherently discloses said first multiple signal uses A1 byte (1111011) and A2 byte (00101000) used in synchronous digital hierarchy (SDH), as a frame heading byte.

8. Regarding claims 17 and 20 – Todd discloses converting from xDSL to SONET.

Todd does not disclose said subscriber service signal is A/D converted at a sampling rate of 8.832, 4.416 or 2.208 mega-sample/second (MS/s), and at a bit solution of 10, 11 or 12 bits.

At the time of the invention, it would have been obvious to provide an A/D converter operating at three data rates to provide three bit resolutions in order to provide the best quality signal in order to recover the xDSL signal at the receiving end. The benefit being that the system can adapt to varying system requirements to achieve the optimum system performance.

9. Regarding claims 18 and 27 and 34 – Todd discloses converting xDSL to Ethernet, refer to Figure 1 and column 6 lines 23 to 32.

Todd does not expressly disclose said first multiple signal is transmitted at 100 Mb/s, 125 Mb/s, 1Gb/s or 1.25 Gb/s.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide multiple data rates for transmission of Ethernet traffic in order to optimize the channel and minimize the delay for transmitting user data. The benefit being higher customer satisfaction.

10. Regarding claims 19 and 33 - Todd discloses converting xDSL to Ethernet, refer to Figure 1 and column 6 lines 23 to 32. It is inherent that the Ethernet packet meets the 802.3 LAN packet to be compliant with the Ethernet specification.

11. Regarding claim 24 – Todd discloses a SONET network wherein said second multiple signal is based on synchronous digital hierarchy (SDH), and further comprising the step of storing said first multiple signal based on synchronous digital hierarchy (SDH), refer to Figure 2 and column 6 lines 31 to 67.

12. Regarding claims 35 and 36 - Todd discloses (a) converting a subscriber service signal including x digital subscriber line (xDSL) signals, from an analog form to a digital form, refer to Figure 2 and column 6 lines 49 to 67.

Todd discloses (b) storing a plurality of thus converted sampling digital signals and control signals into a first multiple signal, and multiplexing in time-sharing a plurality of the thus

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produced first multiple signals to thereby produce a second multiple signal, (xDSL to SONET), refer to Figure 2 and column 6 lines 49 to 67.

Todd discloses (c) transmitting said second multiple signal, SONET on the network ring (callout 204 in Figure 2), refer to Figure 2 and column 6 lines 49 to 67.

Todd does not expressly disclose a ratio between said first sampling rate and a sampling rate of said xDSL modem unit being equal to an integer (claim 35) and said first sampling rate is equal to 1.104 MS/s multiplied by an integer (claim 36).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to make the sampling rate and the first sampling rate a ratio which is an integer and the first sampling rate equal to 1.104 since generating a frequency which is an integer multiple of another frequency is easier to perform and making the base rate 1.104 will result in the rates needed by multiplying by 8, 4, and 2 (8.832, 4.416, or 2.208 mega-sample/second, refer to claim 20) which are easily generated.

#### ***Allowable Subject Matter***

Claims 25, 26 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Russell et al. (US 6,704,326 B2) discloses a payload mapping in synchronous networks.
2. Goodman et al. (US 6,636,529 B1) discloses a semi transparent tributary for synchronous transmission.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (703) 306-5420. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

(703) 872-9306

For informal or draft communications, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

Receptionist (Sixth floor)

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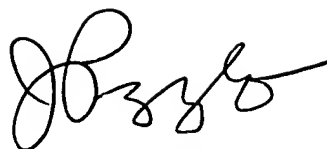
Crystal Park 2

2121 Crystal Drive

Arlington, VA.

John Pezzlo

18 May 2004

A handwritten signature in black ink, appearing to read 'J. Pezzlo', with a stylized, cursive script.

**JOHN PEZZLO**  
**PRIMARY EXAMINER**